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# Humane Trap Testing Program, 1982 to 1984 A Progress Report

By Rewcastle, Catherine S. and R.R.P. Stardom, 1986

**Manitoba**
**Natural Resources**
Wildlife
Biological Services

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# Humane trap testing program, 1982 to 1984
## - A progress report -

Department of Natural Resources,
Wildlife Branch - Biological Services,
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## ABSTRACT

Field testing of a variety of trapping devices accomplished by several agencies between 1958 and 1984 is reviewed. The results of the Manitoba Wildlife Branch project utilizing trappers as testers from 1982-1984 are presented. Eleven different devices were tested for 14 furbearing species by 61 testers. Problems were encountered with soliciting testers, lack of supplies, tester acceptance of new devices and lack of data returned. The small sample size of reliable results precluded conclusions on trap performance of the test devices except to indicate that Stoploss and Conibear 110 traps are efficient for catching muskrats (Ondatra zibethicus).

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TABLE OF CONTENTS


| | Page |
|---|---|
| ABSTRACT | i |
| TABLE OF CONTENTS | ii |
| LIST OF TABLES | iii |
| LIST OF FIGURES | iii |
| LIST OF APPENDICES | iv |
| INTRODUCTION | 1 |
| FIELD TESTING BACKGROUND | 2 |
| METHODS | 5 |
| RESULTS | 9 |
| DISCUSSION | 15 |
| LITERATURE CITED | 21 |

## LIST OF TABLES


| Table | | Page |
|---|---|---|
| 1. | Summary of test trap distribution 1982/83 . . . . . | 10 |
| 2. | Summary of test trap distribution 1983/84 . . . . . | 11 |
| 3. | Summary of trap performance for 1982/83 and 1983/84 test trap seasons . . . . . | 12 |
| 4. | Summary of species caught, trap type, strike locations and condition of animal for 1982/83 and 1983/84 test trap seasons . . . . . | 16 |


## LIST OF FIGURES


| Figure | | Page |
|---|---|---|
| 1. | Delineation of biogeographic regions and location of trap testing areas in 1982/83 and 83/84 test trap seasons . . . . . | 6 |

## LIST OF APPENDICES


| Appendix | | Page |
|---|---|---|
| I. | Traps approved for field testing by FPCHT . . . . . | 23 |
| II. | Habitat classifications and major furbearer harvest by biogeographic region . . . . . | 24 |
| III. | Set types and sample data recording forms . . . . . | 26 |
| IV. | Summary of tester ratings of test traps 1982/83 and 1983/84 . . . . . | 29 |
| V. | Testing devices . . . . . | 30 |
| VI. | Summary of trap performance for 1982/83 and 1983/84 test trap season . . . . . | 33 |

## INTRODUCTION

In June of 1981, the Federal-Provincial Committee for Humane Trapping (FPCHT) submitted a final report of its activites during the mandate period 1973 to 1981 (FPCHT 1981). As part of the report, general trapping systems were recommended for specific furbearer groups. Seventeen trap models were approved for field testing in so far as having met the mechanical and approach test requirements identified by earlier kill threshold research (Appendix I). Minor attempts via FPCHT to field test some of the devices did not meet with great success for a variety of reasons. In the FPCHT report, one of the recommendations for future work was that field testing be a vital requirement for the devices "approved" in the report.

To facilitate the field testing of these devices, the Western Fur Managers Conference (WFMC) established a preliminary test program in 1981. Unfortunately, the majority of the devices were only at the prototype stage and few were available in quantity. Initially, the primary objectives of the program were to determine the efficiency and practicality of using these devices in the field as it was assumed that a trap, having met controlled laboratory research requirements, would function as effectively in the field.

After preliminary results, it was obvious that insufficient base line data existed for comparison of efficiency and that the test devices did not always perform according to laboratory results. The Canadian General Standards Board (CGSB) standard for humane traps, based on preliminary standards in the FPCHT final report, was approved

in early 1984 and includes requirements specific to field performance (CGSB 1984). These performance criteria emphasize the essential nature of gathering base line data upon which field test standards and methodology refinement can be based. Since 1983, the major objectives of the Manitoba field test program have been to gather data relative to:

1. Current trapping systems; their efficiency and relative humaneness.
2. Available FPCHT "approved" devices and their applicability to normal trapping systems.
3. Relatively new devices which have not had formal laboratory testing but are in use on a limited scale.

The following is a report including the historical background of field testing in the province and the results of the 1982-83 and 1983-84 field test projects.

## FIELD TESTING BACKGROUND

In Manitoba, concern with increasing the use of humane trapping systems began during the 1950's. In 1958, a Trapper Education Officer, Bob Burns, began work on experimental traplines with several "humane" ("quick killing traps") traps. Prior to this time, "field tests" of devices were conducted by the trappers themselves.

Between 1958 and 1973, the following 11 trap models were used in some form of field testing:

| | | |
|---|---|---|
| Conibear 1958 onward | Sawyer 1964 only | Northern 1970 |
| Bigelow 1958 only | Mohawk 1966-70 | Dalgren 1971-72 |
| Talyuk 1960 only | Canada 1969-71 | Killer 1972-73 |
| Fenn 1963 only | Compensator 1969-71 | |

Of these, only the Conibear, Bigelow, small Mohawk and small Canada traps showed any promise for some furbearers in specific sets. Only the Conibear trap had the potential for continued field testing. The primary objectives were to determine whether or not the traps had any potential application for furbearer capture and dispatched the furbearers quickly. Over the years, several approaches had been taken in an attempt to intensify test effort and standardize results, several of which were:

1. Field testing conducted by Natural Resources staff.
2. Trapper provided with trap models to field test on experimental traplines.
3. Trappers provided with trap models for field test during their normal trapping operation.
4. The latter two methods with various combinations of salary and fur disposal.

From 1974 to 1977, three "testers" were hired and paid a salary for a portion of the fur season during which they only used "quick kill" traps. For the most part, the efforts involved attempts to discover methods of taking most furbearer species using

various sizes of Conibear traps. Work was done in isolation from comparative trapping systems and based on current knowledge, the results were predictable. For most species the "test" systems were less productive than normal trapping systems but were relatively more "humane" (the captured animal appeared to experience less trauma before death).

By 1978, a field test system had been developed by FPCHT. Except for sporadic trials, most field tests became a functional response to FPCHT requirements and test kit provision. Small numbers of test traps, sometimes of poor mechanical construction, created a low level of data return and a reluctance on the part of the trappers to test the devices.

Prior to the FPCHT final report in June 1981, the "Flin Flon document" was prepared by fur management representatives from Saskatchewan, Northwest Territories and Manitoba which outlined creation of the Fur Institute of Canada and the need for field testing of devices expected to be "certified" by the FPCHT research results. Following receipt of the final report in September 1981, the WFMC at Tramping Lake, Manitoba attempted to establish a continuing field test program with emphasis to be on :

1. The devices "approved" by FPCHT
2. A comparison of the efficiency or productivity of the approved devices to regular trapping systems.
3. Determining the applicability and practicality of the devices in actual trapping operations.

It was assumed that certification of the devices meant that they were effective (humane, FPCHT laboratory working definition: caused death or unconsciousness leading to death within three minutes) for the species for which they were intended. Initially, field test protocol and report forms differed only slightly from those developed by FPCHT. Expansion and modification of the field test system since 1981 has brought the program to the point of this report.

## METHODS

The province-wide trap test program was conducted during the trapping seasons of October to May inclusive, in both 1982-83 and 1983-84. Trapper co-operation was solicited through Regional Fur Managers, Trapline Officers, Natural Resources Officers, Winnipeg Head Office personnel and contact with trappers at fur schools and the annual Manitoba Registered Trappers Association (MRTA) convention. Testing was also carried out by Fur Unit personnel on the experimental trapline (XTL 28) at Tramping Lake, Lat. 54°50'W Long.100°08'N.(Fig. 1). Allocation of test effort followed delineation of biogeographic regions (Fig. 1) and major harvest areas for each species group (Appendix II).

Emphasis was placed on those traps identified by FPCHT as having the potential for humane capture (Appendix I). Test kits of five to ten traps depending on type and supply were distributed to trap testers. Each kit was accompanied by recording forms (Appendix III) which were to be filled in on each visit to the set. Information on a similar number of traps the trapper would normally use in the same circumstances was also requested. No compensation was made in return

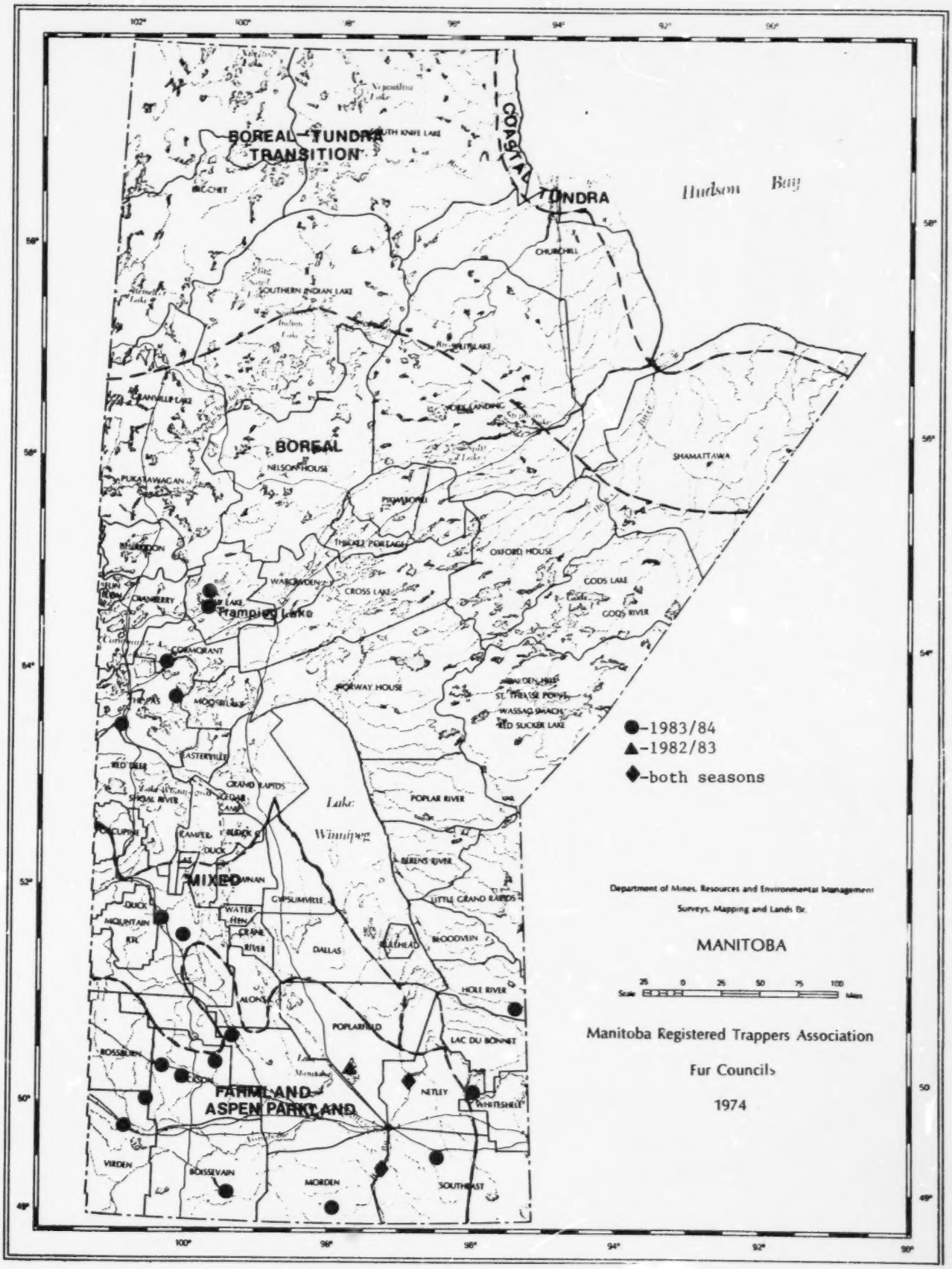


Figure 1: Delineation of biogeographic regions and location of trap testing areas in 1982/83 and 83/84 test trap seasons.

except the issuance of a cooperator crest on receipt of completed forms.

Required information included the trap type, target species, date of check, trap location, set type, capture, strike location, animal dead or alive at time of check and evidence of pelt damage caused by the trap. If there was no capture the suspected reason was categorized as escaped, mechanical failure, weather interference, animal sign at site but did not enter the trap or left blank if there was no sign and set was intact. A list of non-target species caught, including other furbearers and non-furbearers (ie. dog, bird) was requested.

Diagrams of the trap sets and a list of bait or lure was also requested. Sets were arbitrarily categorized to type for analysis (Appendix III). Each trapper was asked to rate the trap types used as to portability, safety, efficiency, humaneness, ease of repair and ease of setting (Appendix IV). Suggestions were welcomed for the improvement of the traps and techniques which would aid the efficiency and success of the fur harvest.

The data were analyzed on an Apple II with two disk drives utilizing the Humane Trapping Data Management System developed by Johnson (1984).

**Test Devices**

Three basic trap types were utilized during the 1982/83 testing season. The Montgomery 600, a Conibear-type killing trap was used to catch beaver (Castor canadensis), raccoon (Procyon lotor) and fisher

(Martes pennanti). Two kinds of submarine traps, specialized drowning traps for muskrat (Ondatra zibethicus), were distributed in addition to #1 and #1 1/2 Stoploss traps which are specialized leghold traps for muskrat drowning sets (Appendix V).

The numbers and types of traps were increased in the 1983/84 season. In addition to those traps already mentioned four sizes of Conibear (110, 220, 280 and 330) were tested for a variety of species. An experimental size 0, somewhat smaller than a 110, was used on one occasion. A new invention by a local trapper was distributed for testing. The Korosil Trail Trap (Appendix V) was designed specifically to set on rabbit trails to catch red fox (Vulpes vulpes) and coyote (Canis latrans). The trap was designed with a lateral strike bar intended to catch these canids by the neck.

Testing of Hansen traps was restricted to XTL 28 due to the small supply. The Hansen was constructed of two steel rings acting as jaws closing one on top of the other designed to kill mink (Mustela vison) and marten (Martes americana) by striking them on the neck (Appendix V).

The new model Kania Instant Trap (metal box vs wooden box) (Appendix V) was not distributed as it was received late in the season: however, some incidental testing was conducted at XTL 28. The Instant Trapper is a wooden or metal box containing a trigger, bait station and killing bar. The bar acts in a guillotine-like motion when an animal sticks its head in the box setting off the trigger. The trap was designed for a neck strike location on mink and marten.

The Montgomery Stake 'n' Take trap was basically a Conibear 110 design with a modification for a stake to hold the trap in place, making it easier to set up in more situations than the 110.

## RESULTS

In the 1981/82 test season, 70 traps were distributed to 11 trappers in southern Manitoba (Table 1). A total of 309 traps were distributed to 25 trappers ( excluding XTL 28 staff) during the 1983/84 season. Some of these trappers received more than one type of trap thus, the inflated total on Table 2. Testers were scattered through the southern and western portion of the province during the second year(Fig. 1).

The Conibear 110 was an effective muskrat trap for the one tester reporting. A 75% success ratio for submersed sets was realized (Table 3, Appendix VI). All strikes were in the neck and chest area with no live captures at time of checking.

Trap testers using Conibear 220 traps had a success ratio of .10 target species/check in 425 trap days. Strikes on those species caught were mostly on the neck, an acceptable strike location. Mechanical problems did not appear to be a major problem.

The two testers using Conibear 280 judged it as a good trap based on an abbreviated two week testing period (Appendix IV). Their success ratio was 0.14 target species/check with good strikes and no mechanical problems (Table 3).

The Conibear 330 caught more non-target species (0.14 non-target species/check) than target species (0.05 target species/check). The trap caused pelt damage on one non-target caught.

TABLE 1. Summary of test trap distribution 1982/83.

| Trap Type | Habitat | # in Field | Trappers |
|---|---|---|---|
| Montgomery 600 | farmland-aspen parkland | 5 | 1 |
| Stoploss #1 | farmland-aspen parkland-marsh | 5 | 1 |
| Stoploss #1 1/2 | farmland-aspen parkland-marsh | 6 | 2 |
| Submarine - Box | farmland-aspen parkland-marsh | 35 | 4 |
| Submarine - funnel | farmland-aspen parkland-marsh | 19 | 3 |
| | | 70 | 11 |

TABLE 2. Summary of test trap distribution 1983/84.

| Trap Type | Habitat | # in Field | Trappers |
|---|---|---|---|
| Montgomery 600 | farmland-aspen parkland | 40 | 10 |
| | boreal | 6 | 1 |
| Conibear 110 | farmland-aspen parkland | 36 | 1 |
| 280 | farmland-aspen parkland | 4 | 1 |
| | boreal | 19 | 4 |
| 330 | farmland-aspen parkland | 8 | 1 |
| Stake'n'take | farmland-aspen parkland | 24 | 2 |
| Korosil | farmland-aspen parkland | 50 | 8 |
| Kania | farmland-aspen parkland | 5 | 1 |
| | boreal | 20 | 1 |
| Padded Leghold 11/2 | farmland-aspen parkland | 10 | 1 |
| Stoploss 11/2 | farmland-aspen parkland-marsh | 10 | 1 |
| Submarine-Box | farmland-aspen parkland-marsh | 40 | 8 |
| | boreal-marsh | 24 | 5 |
| Submarine - funnel | farmland-aspen parkland-marsh | 5 | 2 |
| | boreal-marsh | 8 | 2 |
| | | 310 | 49 |

Table 3: Summary of trap performance for 1982/83 and 1983/84 test trap seasons.

| | | | EFFORT | | CAPTURE | | | NO CAPTURE | | | | STRIKE LOCATION | | | | | | CONDITION | | SUCCESS RATIOS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trap Type | Habitat | Set Type | Total Days Set | Total Days Checked | # Target Caught | # Non-target Caught | # Other Caught | # Sign | # Escaped | # Mechanical Failure | # Weather Triggered | Head | Neck | Chest | Abdomen | Limb | Drowned | Pelt Damage | # Alive | # Target/day | # Target/check | #Non-target/day | # Non-target/check | # Furbearer/day | # Furbearer/check |
| Conibear 110 | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Submerged | 180 | 62 | 47 | | 2 | | | | 2 | | 14 | 33 | | | | | | .26 | .76 | .00 | .00 | .26 | .76 |
| (n=1)* | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conibear 220 | 1 | Box | 320 | 34 | 6 | 3 | | 2 | | | | 1 | 7 | 1 | | | | | 1 | .02 | .18 | .01 | .09 | .03 | .26 |
| | | Cubby | 105 | 28 | | | | | | | | | | | | | | | | .00 | .00 | .00 | .00 | .00 | .00 |
| (n=2) | | All | 425 | 62 | 6 | 3 | | 2 | | | | 1 | 7 | 1 | | | | | 1 | .01 | .10 | .01 | .05 | .02 | .15 |
| Conibear 280 | 2 | Run | 120 | 36 | 5 | 1 | 1 | 4 | 1 | | | 1 | 3 | 2 | | | | 1 | | .04 | .14 | .01 | .03 | .05 | .17 |
| (n=2) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conibear 330 | 3 | Run | 87 | 22 | 1 | 3 | | | 2 | | | | 1 | 3 | | | | 1 | | .01 | .05 | .03 | .14 | .05 | .18 |
| (n=1) | | | | | | | | | | | | | | | | | | | | | | | | | |
| Korosil | 1 | Box | 105 | 22 | 2 | | 3 | 1 | 3 | | | | 1 | 1 | | | | | | .02 | .09 | .00 | .00 | .02 | .09 |
| | | Run | 3 | 2 | | | | 1 | 1 | | | | | | | | | | | .00 | .00 | .00 | .00 | .00 | .00 |
| | | Trail | 3195 | 358 | 18 | 2 | | 6 | 5 | | | | 12 | 3 | 5 | | | 2 | 1 | .01 | .05 | .00 | .01 | .01 | .06 |
| (n=8) | | All | 3301 | 382 | 20 | 2 | 3 | 8 | 9 | | | | 13 | 4 | 5 | | | 2 | 1 | .01 | .05 | .00 | .01 | .01 | .06 |
| Montgomery 600* | 1 | Box | 385 | 124 | 5 | 7 | 5 | 14 | | 4 | | | 7 | 2 | 3 | | | | | .01 | .04 | .02 | .06 | .03 | .10 |
| | | Cubby | 82 | 31 | 2 | 1 | | 2 | 3 | | | 1 | 1 | | 1 | | | | | .02 | .06 | .01 | .03 | .04 | .10 |
| | | Hole | 170 | 31 | 4 | 3 | 4 | 6 | 3 | | | 1 | 4 | 1 | 1 | | | | 1 | .02 | .13 | .02 | .10 | .04 | .23 |
| | | House | 40 | 16 | 3 | | | | | | | | 3 | | | | | | | .08 | .19 | .00 | .00 | .08 | .19 |
| (n=11) | | Open | 86 | 10 | 1 | | | | 2 | | | | 1 | | | | | | 1 | .01 | .10 | .00 | .00 | .01 | .10 |
| | | Run | 89 | 32 | 4 | 1 | | 9 | 5 | 8 | | 2 | 2 | 1 | | | | | | .04 | .13 | .01 | .03 | .06 | .16 |
| | | Submerged | 6 | 2 | | | | 1 | | | | | | | | | | | | | | | | | |
| | | Trail | 190 | 34 | 2 | | 1 | 15 | 5 | 1 | | | 1 | 1 | | | | 1 | | .01 | .06 | .00 | .00 | .01 | .06 |
| | | All | 1048 | 300 | 21 | 12 | 10 | 46 | 18 | 9 | | 4 | 19 | 5 | 5 | | | 1 | 2 | .02 | .07 | .01 | .04 | .03 | .11 |
| Stake'n'Take | | Hole | 495 | 70 | 7 | | 3 | 20 | 3 | 4 | 3 | | | 10 | | | | | | .01 | .10 | .01 | .04 | .02 | .14 |
| | | Trail | 18 | 4 | | | | 2 | 1 | | | | | | | | | | | | | | | | |
| (n=2) | | All | 513 | 74 | 7 | | 3 | 22 | 4 | 4 | 3 | | | 10 | | | | | | .01 | .09 | .01 | .04 | .02 | .14 |
| Stoploss #1 1/2 | 6 | Feeder | 76 | 64 | 25 | | 14 | | 5 | 3 | | | | | | | 25 | 4 | 5 | .33 | .39 | .00 | .00 | .33 | .39 |
| | | Open | 10 | 7 | 6 | | 1 | | | | | | | | | | 6 | 2 | 3 | .60 | .86 | .00 | .00 | .60 | .86 |
| | | Run | 51 | 29 | 15 | | 1 | 3 | | 1 | | | | | | | 15 | 7 | 4 | .29 | .52 | .00 | .00 | .29 | .52 |
| | | Submerged | 30 | 30 | 18 | | 12 | | | | | | | | | | 18 | | | .60 | .60 | .00 | .00 | .60 | .60 |
| (n=2) | | All | 167 | 130 | 64 | | 28 | 3 | 5 | 4 | | | | | | | 64 | 13 | 12 | .38 | .49 | .00 | .00 | .38 | .49 |
| Stoploss #1 | 6 | Feeder | 5 | 5 | 4 | | | | | 1 | | | | | | | 4 | 1 | 4 | .80 | .80 | .00 | .00 | .80 | .80 |
| | | House | 10 | 10 | 7 | 1 | | 1 | | | | | | | | | 8 | 2 | 2 | .70 | .70 | .10 | .10 | .80 | .80 |
| | | Run | 15 | 15 | 13 | | 1 | | | 1 | | | | | | | 13 | 1 | 2 | .86 | .86 | .00 | .00 | .86 | .86 |
| (n=3) | | All | 30 | 30 | 24 | 1 | 1 | 1 | | 2 | | | | | | | 25 | 4 | 4 | .80 | .80 | .03 | .03 | .83 | .83 |

Continued

Table 3: Summary of trap performance for 1982/83 and 1983/84 test trap seasons (continued)

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Submarine Funnel *6 | Run | 187 | 72 | 49 | 1 | | | | | 47 | | | .26 | .68 | .00 | .01 | .27 | .69 |
| | Submerged | 316 | 171 | 68 | | 4 | 50 | | | 68 | | | .22 | .40 | .01 | .02 | .23 | .42 |
| (n=5) | All | 503 | 243 | 117 | 1 | 4 | 50 | | | 117 | | | .23 | .48 | .00 | .00 | .23 | .49 |
| Submarine Box *6 | Run | 163 | 141 | 96 | | 9 | 7 | 2 | | 96 | | 1 | .59 | .68 | .05 | .00 | .59 | .68 |
| | House | 5 | 4 | 2 | | | | | | 2 | | | .40 | .50 | .00 | .00 | .40 | .50 |
| (n=7) | Submerged | 242 | 231 | 138 | | 4 | 38 | 2 | | 138 | | 2 | .57 | .60 | .00 | .00 | .57 | .60 |
| | All | 410 | 376 | 236 | | 13 | 45 | 4 | | 228 | | 3 | .56 | .63 | .00 | .00 | .58 | .63 |

* Results are from both 1982/83 and 1983/84 season, two years' data.
° n= number of trap testers

The success ratio was low for the Korosil Trail Trap (0.05 target species/check). In 3301 trap days and 382 checks, only 20 target species, 2 non-targets and 3 others were caught. Most strikes were on the neck but 22% of the animals were caught by the abdomen. There were a number of escapes from the trap by porcupine (Erethizon dorsatum) and raccoon. More comments than structured data were received. There was difficulty in finding testers because trappers were reluctant to try a non-traditional, (not a leghold or Conibear) irregular looking trap. Comments received included: there was too much metal; hard to hide; hard to set trigger in cold weather without gloves, it would not kill animals quickly.

The Montgomery 600 was well accepted by the testers and many requested the name of the supplier for these traps. The average success ratio was 0.07 target species/check although some testers were much more successful than others. Some escapes of porcupine and raccoon were reported. Mechanical problems seemed to be exclusive to run sets made by one particular tester.

The similarity of the Stake 'n' Take trap to the Conibear 110 made this trap readily acceptable in the field. Two sets of data were received. A 10% capture rate was accomplished, strikes were in the chest area and mechanical problems were minimal.

The #1 Stoploss was used efficiently to capture muskrat with 0.80 target species/check and 21 of 25 captures dead at the time of checking. One non-target furbearer was caught. There were few mechanical problems and only one escape during 30 trap days.

The #1 1/2 Stoploss was used somewhat less efficiently with 0.49 target species/check. Eighty percent of the muskrats caught were dead at time of checking. No non-target animals were captured but there were a number of trap misses during 167 trap days.

Submarine traps made multiple catches per trap day in several instances with as many as seven muskrats in one box trap over one trap day. Results in Table 3 do not reflect the potential success of these traps if used in suitable situations. One tester recorded 0.89 target species/check while others were not as effective in their setting techniques. Catch ratios of .63 target species/check for the box and .48 target species/check for the funnel submarine compare favourably with the results for #1 1/2 Stoploss with 100% and 99% respectively, of the muskrat captured dead at the time of checking.

No written data were received for the Hansen trap. However, information on trap performance was gathered by personal communication with staff members involved. In a short 10 day testing period at XTL 28, non-target species were caught in the Hansen trap. Several birds were captured. There were also problems with safely setting the trigger as there is no safety catch (R. Burns, pers. comm.).

The Kania Instant Trapper was also set for a short period of time in March 1983 and March 1984. One fisher was caught in the wooden box in 1983. No target species (mink) were caught in the metal box in 1984. Four ermine (Mustela erminea) caught by the abdomen constituted the total catch in these traps (R. Burns, pers. comm.). In the 1984

test period, two mink approached the entrance of the traps but would not enter. Other instances were reported that marten displayed the same behaviour (C. Mushumanski, trap tester from Swan River, pers. comm.).

A Conibear 0 was set for one trap night in February 1984. There was a successful capture of a red squirrel (Tamiasciurus hudsonicus).

When target animals were captured with trap designs and sizes specific to them the strike locations were usually acceptable (the neck or chest area) (Table 4). When traps were oversized for non-target species much damage occurred. The usual strike location of an oversized trap was the abdomen, sometimes an animal remained alive for a long period of time. Muskrat caught in leghold traps, even in drowning sets, remain alive more often than muskrat or other species caught in any other trap type (Table 4). Damage to the pelt is more extensive but often due to interaction with other muskrats. Occasionally a target species will not receive a good strike, sustain damage to the pelt and remain alive for a period of time. Results on Table 4 indicates that this does not happen with any regularity.

## DISCUSSION

### Logistics:

The greatest drawback encountered with the trap testing program was the lack of complete data turned in. Some test trappers were conscientious and diligent in setting and experimenting with new traps and completing the required paper work. However, an equal number received traps and had no inclination to set them. Others set the traps but in such an ineffective manner that results, if recorded, were

Table 4: Summary of species caught, trap type, strike locations and condition of animal for 1982/83 and 1983/84 test trap seasons.

| Species | Target | Trap Type | Strike Location | | | | | | Pelt | Frozen | Alive |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Head | Neck | Chest | Abdomen | Limb | Drown | Damage | To trap | |
| Badger | Y | Montgomery 600 | | 1 | | | | | | | |
| Beaver | Y | Conibear 280 | 1 | 3 | 1 | | | | | | |
| | Y | Conibear 330 | | | 1 | | | | | | |
| | Y | Montgomery 600 | 2 | 2 | | | | | | | |
| Coyote | N | Korosil | | | | 1 | | | | | |
| Ermine | N | Montgomery 600 | | | | 1 | | | | | |
| | N | Stake 'n' take | | | 3 | | | | | | |
| Fisher | N | Korosil | | 1 | | | | | | | |
| | N | Montgomery 600 | | | | 1 | | | | | |
| Red Fox | Y | Korosil | | 11 | 3 | 4 | | | | 2 | |
| | N | Montgomery 600 | | 2 | 1 | | | | | | 1 |
| Mink | N | Montgomery 600 | | 1 | | | | | | | |
| | Y | Stake 'n' take | | | 7 | | | | | | |
| | N | Stoploss #1 | | | | | 1 | | | | |
| | N | Submarine Funnel | | | | | | 1 | | | |
| Muskrat | Y | Conibear 110 | | 14 | 33 | | | | | | |
| | N | Conibear 280 | | | 1 | | | | 1 | | |
| | N | Conibear 330 | | | 1 | | | | 1 | | |
| | Y | Stoploss #1 | | | | | 24 | | 3 | | 14 |
| | Y | Stoploss # 1 1/2 | | | | | 64 | | 13 | | 12 |
| | Y | Submarine Box | | | | | | 228 | | | 3 |
| | Y | Submarine Funnel | | | | | | 117 | | | |
| Otter | N | Conibear 330 | | 1 | 1 | | | | | | |
| Raccoon | Y | Conibear 220 | 1 | 5 | | | | | | | |
| | Y | Korosil | | 1 | 1 | | | | | | |
| | Y | Montgomery 600 | | 13 | 3 | | | | 1 | | 1 |
| Red Squirrel | N | Montgomery 600 | 1 | 1 | | | | | | | |
| Skunk | N | Conibear 220 | | 2 | 1 | | | | | | 1 |
| | | Montgomery 600 | 1 | | 2 | 2 | | | | | |
| Other(cat,fish bird) | N | Montgomery 600 | | 1 | 1 | | | | | | 1 |
| | N | Submarine Funnel | | | | | | 4 | | | 4 |

unreliable or not applicable to the average situation. There were yet others who set the traps effectively and successfully but data received were sketchy at best.

Another problem was the unavailability of traps on the market and lack of funds to purchase devices. Some of the traps in the test program were only available from the inventors who manufactured them as required, usually in small quantities and often with time delays. There was difficulty, in 1982-83 particularly, with providing enough traps to potential testers. The problem was not as great in 1983-84 as budgeting allowed the acquisition of a shipment of traps between seasons: the concern was then distribution. Winnipeg was the central distribution centre, and though the fur managers did their best to identify testers and supply them with traps, some were left out because poor communication and shipping problems precluded delivery. Commercial carriers were used where the tester receiving the material was experienced in the testing and recording procedures. Most cases required personal delivery by Fur Unit staff so recording procedures could be explained.

Activities carried out at XTL 28 did not contribute a great amount of data to the program. Visits to the line were short, time spent scouting and setting the line was limited and the number of staff involved often confused the recording procedures. Recording was not done as diligently as required for a reliable test of new devices.

**Test Devices:**

The greatest difficulty with many of the traps listed as

approved by FPCHT was one of availability. The Gabry Bionic and the Novak 180 and 280 appeared to exist only as a few prototype models. The Gabry Challenger was extremely high priced and difficult to obtain. The Hanson, Vital I and II and the original wood box Kania had initial supply problems and mechanical difficulties which precluded voluntary testing by trappers. The new metal box Kania is more readily available but difficulties continued in enticing trappers to test the device.

The remainder of approved traps are simply several modifications of Conibears. Of these, only the 120 Conibear (Borderline), the 220 Series I (Borderline) and Series II and the Montgomery 600 are available in commercial quantities. Superficially, it would appear that an optimized Conibear type trap in five different sizes would suffice.

Several other trap types were included in the test program as:

1. A definite need of baseline information on other current devices was evident.
2. Approved traps only applied to 7 of the 19 furbearer species taken in Manitoba.
3. Expansion of data gathering in line with FPCHT recommendations was essential.
4. In the preliminary WFMC distribution of effort, Manitoba was identified for work on nine species and particularly muskrat trapping systems.
5. Several inventions which were produced too late for inclusion into the FPCHT program were being used in regular trapping

operations and it was deemed necessary to gather field data on them.

6. Initial results on the padded traps appeared favourable and additional data were essential prior to making any decisions regarding their use.

It is apparent from the two preliminary years of the program that the data gathered not only related to the increased use of humane trapping systems but has furbearer management implications. It may be possible to design seasons to capitalize on target furbearer harvest while minimizing non-target captures. The Conibear type traps were more readily accepted as most trappers knew how to use them for best results. Unusual designs evoked tester reluctance and this was often reflected in poor results. Continued emphasis on the Conibear-type traps will improve trapping systems while allowing time for gradual acceptance of new designs. An example of a new design was the Korosil Trail Trap which was not well accepted by trappers due to its strange appearance and their lack of handling experience. From the "humane" aspect several concerns are evident with respect to strike location and dispatch time. The trap, even with relatively low productivity, does capture canids (one of the more difficult species groups to deal with) and so deserves some additional investigation.

Low overall success ratio for most trap types may be a reflection of short test periods, insufficient sample size of traps or tester and the availability of some testers. Few mechanical problems were experienced; therefore, lack of success may be more closely related to tester ability or target species abundance and behaviour in the test

area. The range of variables in field systems is great and few data exist on current methods to make comparisons.

Trap types capturing many non-target animals may be a reflection of the set and trapper ability rather than a function of the trap itself. More problems arose, however, with those traps in terrestrial systems requiring attachment of bait to the trigger. More specific techniques must be developed in order that trappers can more effectively use the new devices.

As furbearers exist at widely variable population density levels, intensive effort may be best placed on relatively small but productive areas. This is much more difficult for species such as the badger (Taxidea taxus) in comparison to squirrel or muskrat. From the data in this report, Conibear 110 and submarine traps appear to be more consistent killing devices for muskrat than Stoploss traps and also had a high enough success rate that trappers sacrificed little productivity for the increased "humane" aspects. From preliminary data it also appears that the Stoploss #1 jaw size, when set properly, is adequate for muskrat.

Sample size continues to be a major problem. With a larger sample size an optimum checking schedule may be calculated using number of days set/number of days checked and comparing this value to success rates. A much larger sample size over several whole trapping seasons is needed to make reliable judgements or conclusions about trap performance for the average trapper.

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CAN2-144.1-M84. Minister of Supply and Services, Canada.

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## Appendix I

Table A: Traps approved for field testing by FPCHT.

| TRAP TYPE | SPECIES APPROVED FOR |
|---|---|
| Gabry Challenger | Mink, marten, muskrat |
| Novak 180 (prototype) | mink, marten, muskrat |
| Hanson (prototype) | mink, marten, muskrat |
| Gabry Bionic | mink, marten, muskrat |
| Vital | mink, marten, muskrat |
| 120 Conibear Woodstream modification (borderline) | mink, marten, muskrat |
| Kania (prototype) | mink, marten, muskrat |
| 220 Conibear old model CAHT modification | raccoon |
| 220 Conibear Woodstream modification | raccoon, beaver |
| 220 Conibear, old model horsefly modification | raccoon, beaver |
| Vital | raccoon, lynx, bobcat |
| Montgomery | raccoon, beaver |
| 220 Conibear, old model borderline | beaver |
| 330 Conibear, old model CAHT modification | beaver |
| 330 Conibear, old model Horsefly modification | beaver |
| Novak 280 (prototype) | beaver, lynx, bobcat |
| Montgomery (prototype) | beaver, lynx, bobcat |

## Appendix II

Table A: Habitat Classifications and Codes

1. Farmland - Aspen Parkland
2. Mixed.
3. Boreal
4. Boreal - Tundra Transition
5. Coastal Tundra
6. Marsh.

Table B: Major furbearer harvest by biogeographic region.

1. FARMLAND-ASPEN PARKLAND

Species: Badger
Raccoon
Skunk
Red fox
Coyote
Muskrat
Ermine

2. MIXED

Species: Muskrat
Coyote
Red fox
Ermine

3. BOREAL

Species: Squirrel
Ermine
Beaver
Fisher
Mink
Lynx
Wolf
Otter

4. BOREAL-TUNDRA TRANSITION

Species: Arctic Fox
Wolverine
Marten
Wolf

5. COASTAL TUNDRA

Species: Arctic fox

6. MARSH

Species: Muskrat

## Appendix III

SET TYPES

Run (muskrat and beaver)

Feeder

Submersed

Open (includes snow and soil covered)

Cubby (natural cubby: logs, tree hollow etc.)

Box (artificial cubby: pail, box etc.)

Hole (fox den, badger hole etc.)

Trail (fox trail, rabbit trail)

Pole

Float

House (beaver, muskrat)

# Humane Trap Test Program

Trap Type _____ Target Species _____

Trap No. _____

| | Trap Site | | Capture | | Where Hit | | | | | Condition of Animal | | Pelt Damage From Trap | | | No Capture | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date | Location A,B,C | Picture # s | Species Caught | Carcass No. | Head | Neck | Chest | Abdomen | Limb | Alive | Dead | Frozen to Trap | Yes | No | Animal Sign At Site | Escaped | Mechanical Failure | Weather Triggering | List Unwanted Species Caught |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
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**TRAP No.** : sketches of trap set(s)
Please say which bait or lure was used, and how

| a) | b) | c) | d) |
|---|---|---|---|
| | | | |

Please explain here any successful setting techniques you might have developed for the trap being tested.

How do you rate this trap?

| | excellent | good | satisfactory | poor | very bad |
|---|---|---|---|---|---|
| humaneness | | | | | |
| efficiency | | | | | |
| safety | | | | | |
| weight & portability | | | | | |
| ease of setting | | | | | |
| ease of repair | | | | | |

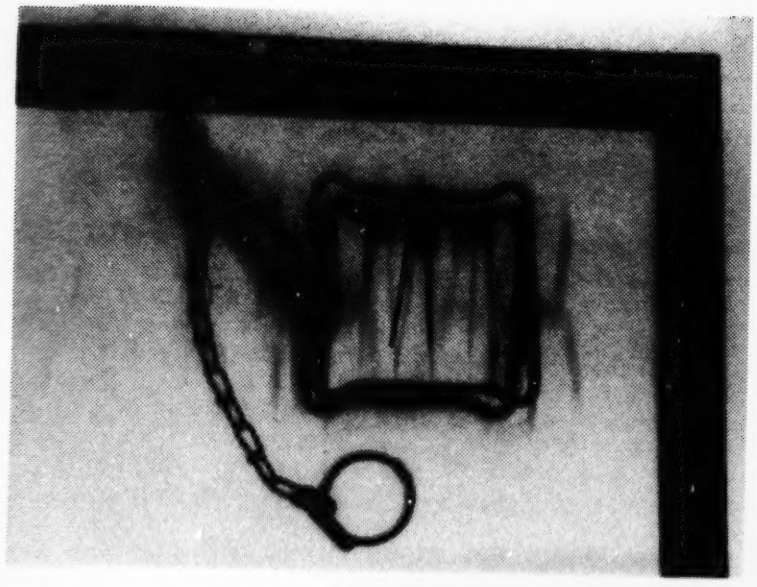
## Appendix IV

Table A : Summary of tester ratings of test traps 1982/83 and 1983/84.

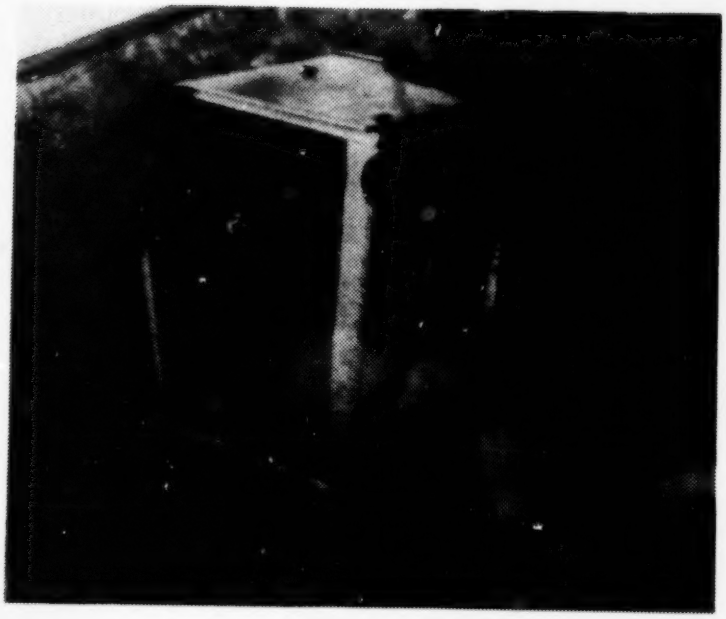
| | | excellent | good | satisfactory | poor | very bad |
|---|---|---|---|---|---|---|
| | | (no. trappers answered) | | | | |
| a) Conibear 110 | humaneness | 1 | | | | |
| | efficiency | 1 | | | | |
| | safety | 1 | | | | |
| | weight & portability | | 1 | | | |
| | ease of setting | | 1 | | | |
| | ease of repair | | | 1 | | |
| b) Conibear 280 | humaneness | 2 | | | | |
| | efficiency | 1 | | 1 | | |
| | safety | 1 | | 1 | | |
| | weight & portability | 1 | 1 | | | |
| | ease of setting | | | 2 | | |
| | ease of repair | | | 1 | | |
| c) Korosil | humaneness | | | | | 1 |
| | efficiency | | | | | 2 |
| | safety | | 1 | 1 | | 1 |
| | weight & portability | | | 2 | | 1 |
| | ease of setting | | | 1 | | 2 |
| | ease of repair | | 1 | | | |
| d) Montgomery 600 | humaneness | 1 | 2 | 1 | | |
| | efficiency | 2 | 1 | | | |
| | safety | | 2 | 2 | | 1 |
| | weight & portability | 1 | 4 | | | |
| | ease of setting | 3 | 2 | | | |
| | ease of repair | 2 | | | | |
| e) Stoploss #1 | humaneness | | 1 | | | |
| | efficiency | | 1 | | | |
| | safety | | 1 | | | |
| | weight & portability | 1 | | | | |
| | ease of setting | | 1 | | | |
| | ease of repair | | 1 | | | |
| f) Stoploss # 1 1/2 | humaneness | | 1 | 1 | | |
| | efficiency | 1 | 1 | | | |
| | safety | | 2 | | | |
| | weight & portability | | | 2 | | |
| | ease of setting | | 1 | 1 | | |
| | ease of repair | | | 2 | | |
| g) Submarine (Box) | humaneness | 3 | 1 | 1 | | |
| | efficiency | 1 | 1 | 2 | | 1 |
| | safety | 3 | 2 | | | |
| | weight & portability | | 2 | 1 | | 1 |
| | ease of setting | | 3 | 2 | | |
| | ease of repair | 3 | 2 | | | |
| h) Submarine (Funnel) | humaneness | 2 | 1 | | | |
| | efficiency | 2 | 1 | | | 1 |
| | safety | 2 | 2 | | | |
| | weight & portability | | 1 | | | 1 |
| | ease of setting | | 3 | | | 1 |
| | ease of repair | 1 | 2 | | | |

## Appendix V

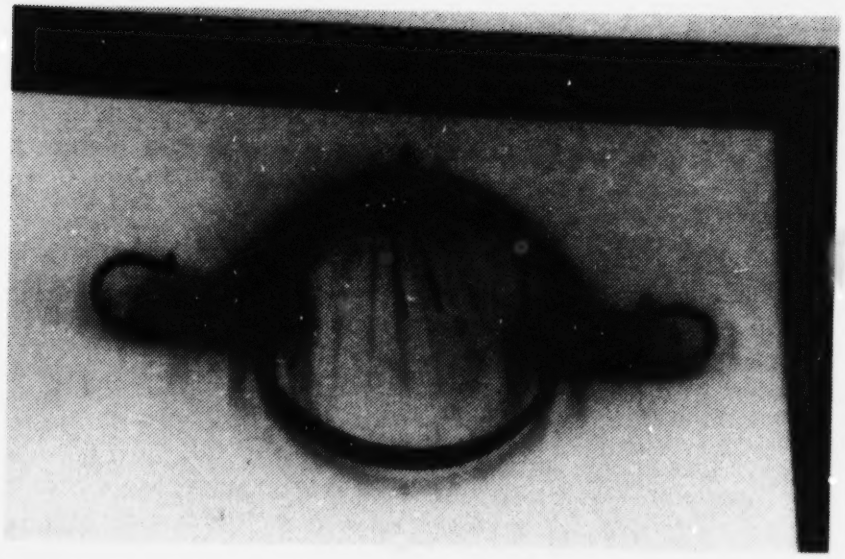
## Testing Devices



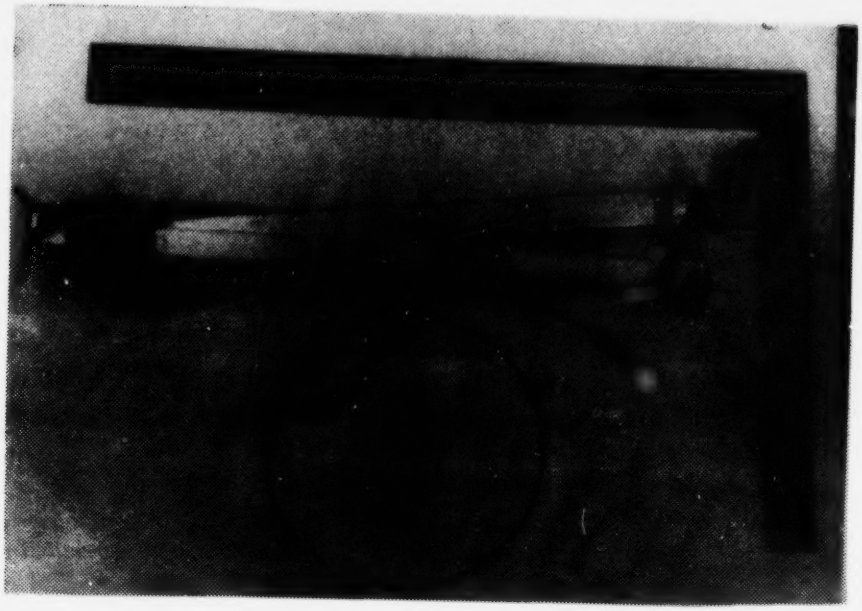
Photograph 1: Conibear 110



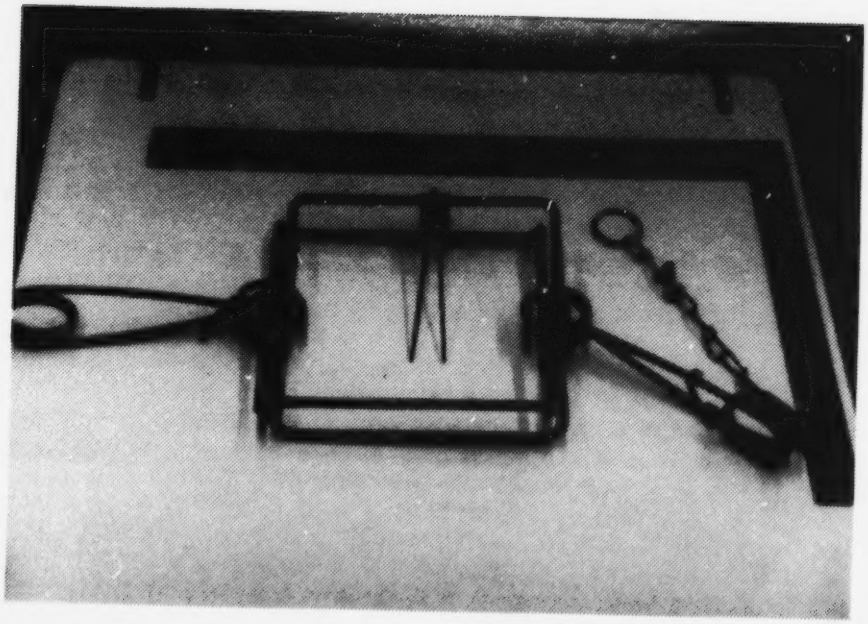
Photograph 2: Kania Instant Trapper (aluminum)



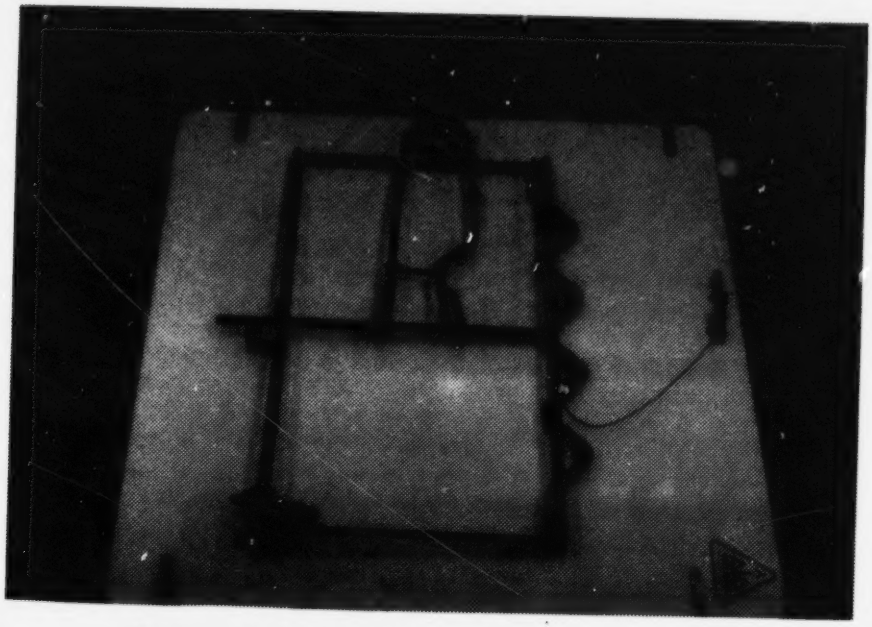
Photagraph 3: Small Round Mohawk Trap



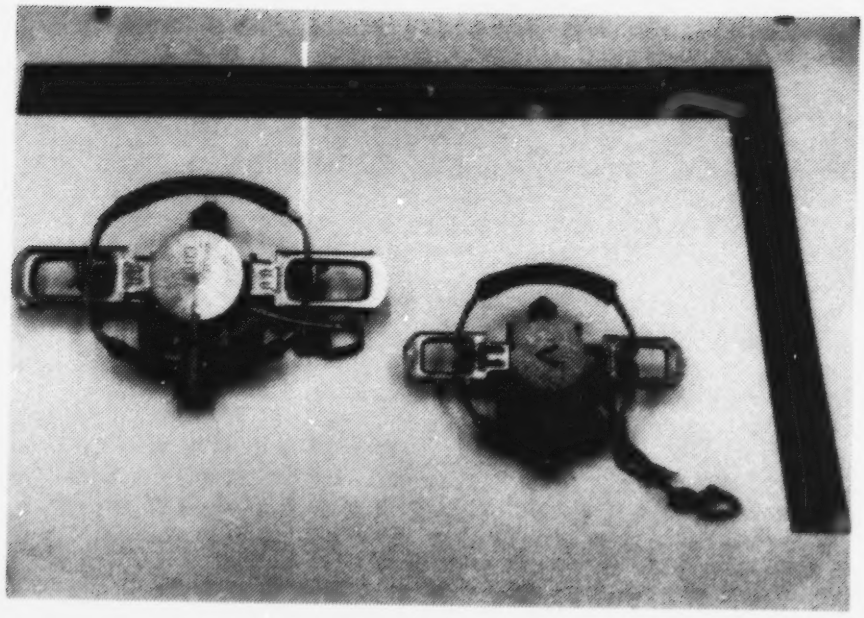
Photograph 4: King Power Snare



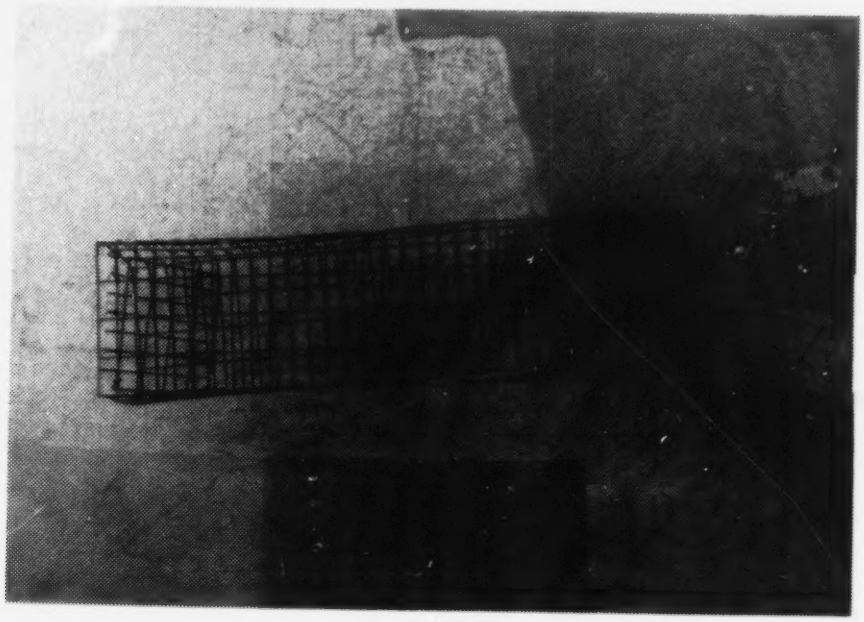
Photograph 5: Montgomery 600



Photgraph 6: Korosil Trail Trap



Photograph 7: Padded Leghold #1½ & #3



Photograph 8: Submarine (Box) Trap

## Appendix VI

Summary of trap performance in 1982/83 and 1983/84 test seasons.

Table A: Summary of trap performance for 1982/83 test trap season.

| | | | EFFORT | | CAPTURE | | | NO CAPTURE | | | | | STRIKE LOCATION | | | | | | CONDITION | | SUCCESS RATIOS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAP TYPE | HABITAT | SET TYPE | TOTAL DAYS SET | TOTAL DAYS CHECKED | # TARGET CAUGHT | # NON-TARGET CAUGHT | # OTHER CAUGHT | # SIGN | # ESCAPED | # MECHANICAL FAILURE | # WEATHER TRIGGERED | HEAD | NECK | CHEST | ABDOMEN | LIMB | DROWNED | PELT DAMAGE | # ALIVE | # TARGET/DAY | # TARGET/CHECK | # NON-TARGET/DAY | # NON-TARGET/CHECK | # FURBEARER/DAY | # FURBEARER/CHECK |
| Montgomery 600 | 1 | Box | 150 | 64 | 3 | 2 | 2 | 10 | | | | | 3 | | 2 | | | | | .02 | .05 | .01 | .03 | .03 | .08 |
| | | Cubby | 11 | 3 | 1 | | | | 1 | | | | | | 1 | | | | | .09 | .33 | .00 | .00 | .09 | .33 |
| (n=1)* | | Hole | 8 | 3 | | | 3 | | | | | | | | | | | | | | | | | | |
| | | Run | 34 | 14 | 2 | | | 2 | | 1 | | | 2 | | | | | | | .06 | .14 | .00 | .00 | .06 | .14 |
| | | Submerged | 6 | 2 | | | | 1 | | | | | | | | | | | | | | | | | |
| | | All | 209 | 86 | 6 | 2 | 5 | 12 | 1 | 1 | | | 5 | | 3 | | | | | .03 | .07 | .01 | .02 | .04 | .09 |
| Stoploss #1 1/2 | 6 | Feeder | 76 | 64 | 25 | | | 14 | | 5 | 3 | | | | | | 25 | 4 | 5 | .33 | .39 | .00 | .00 | .33 | .39 |
| | | Open | 10 | 7 | 6 | | | 1 | | | | | | | | | 6 | 2 | 3 | .60 | .86 | .00 | .00 | .60 | .86 |
| | | Run | 51 | 29 | 15 | | | 1 | 3 | | 1 | | | | | | 15 | 7 | 4 | .29 | .52 | .00 | .00 | .29 | .52 |
| | | Submerged | 30 | 30 | 18 | | | 12 | | | | | | | | | 18 | | | .60 | .60 | .00 | .00 | .60 | .60 |
| (n=2) | | All | 167 | 130 | 64 | | | 28 | 3 | 5 | 4 | | | | | | 64 | 13 | 12 | .38 | .49 | .00 | .00 | .38 | .49 |
| Stoploss #1 | 6 | Feeder | 5 | 5 | 4 | | | | | | 1 | | | | | | 4 | 1 | | .80 | .80 | .00 | .00 | .80 | .80 |
| | | House | 10 | 10 | 7 | 1 | | | 1 | | | | | | | | 8 | 2 | 2 | .70 | .70 | .10 | .10 | .80 | .80 |
| | | Run | 15 | 15 | 13 | | | 1 | | | 1 | | | | | | 13 | 1 | 2 | .86 | .86 | .00 | .00 | .86 | .86 |
| (n=1) | | All | 30 | 30 | 24 | 1 | | 1 | 1 | | 2 | | | | | | 25 | 4 | 4 | .80 | .80 | .03 | .03 | .83 | .83 |
| Submarine Funnel | 6 | Run | 179 | 67 | 46 | 1 | | | | | | | | | | | 47 | | | .26 | .68 | .01 | .01 | .26 | .70 |
| | | Submerged | 309 | 166 | 68 | | 4 | 50 | | | | | | | | | 68 | | | .22 | .41 | .00 | .00 | .22 | .41 |
| (n=3) | | All | 488 | 233 | 114 | 1 | 4 | 50 | | | | | | | | | 114 | | | .23 | .49 | .00 | .00 | .24 | .49 |
| Submarine Flap | 6 | Run | 110 | 107 | 70 | | | 4 | | | | | | | | | 70 | | 1 | .64 | .65 | .00 | .00 | .64 | .65 |
| Gate | | Submerged | 228 | 223 | 138 | | | 38 | | 2 | | | | | | | 138 | | 2 | .61 | .62 | .00 | .00 | .61 | .62 |
| (n=4) | | All | 338 | 330 | 208 | | | 42 | | 2 | | | | | | | 200 | | 3 | .62 | .63 | .00 | .00 | .62 | .63 |

* n= number of trap testers

Table B: Summary of trap performance for 1983/84 test trap season.

| Trap Type | Habitat | Set Type | EFFORT | | CAPTURE | | | NO CAPTURE | | | | STRIKE LOCATION | | | | | | CONDITION | | SUCCESS RATIOS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total Days Set | Total Days Checked | # Target Caught | # Non-target Caught | #Other Caught | # Sign | # Escaped | # Mechanical Failure | # Weather Triggered | Head | Neck | Chest | Abdomen | Limb | Drowned | Pelt Damage | # Alive | # Target/day | # Target/check | #Non-target/day | # Non-target/ check | # Furbearer/day | # Furbearer/ check |
| Conibear 110 (n=1)* | 3 | Submerged | 180 | 62 | 47 | | 2 | | | | 2 | | 14 | 33 | | | | | | .26 | .76 | .00 | .00 | .26 | .76 |
| Conibear 220 | 1 | Box | 320 | 34 | 6 | 3 | | 2 | | | | 1 | 7 | 1 | | | | | 1 | .02 | .18 | .01 | .09 | .03 | .26 |
| | | Cubby | 105 | 28 | | | | 2 | | 1 | 2 | | | | | | | | | | | | | | |
| (n=2) | | All | 425 | 62 | 6 | 3 | | 4 | | 1 | 2 | 1 | 7 | 1 | | | | | 1 | .01 | .10 | .01 | .05 | .02 | .15 |
| Conibear 280 (n=2) | 3 | Run | 120 | 36 | 5 | 1 | 1 | 4 | 1 | | | 1 | 3 | 2 | | | | 1 | | .04 | .14 | .01 | .03 | .05 | .17 |
| Conibear 330 (n=1) | 2 | Run | 87 | 22 | 1 | 3 | | | 2 | | | | 1 | 3 | | | | 1 | | .01 | .05 | .03 | .14 | .05 | .18 |
| Korosil | 1 | Box | 105 | 22 | 2 | | 3 | 1 | 3 | | | | 1 | 1 | | | | | | .02 | .09 | .00 | .00 | .02 | .09 |
| | | Run | 3 | 2 | | | | 1 | 1 | | | | | | | | | | | .00 | .00 | .00 | .00 | .00 | .00 |
| | | Trail | 3193 | 358 | 18 | 2 | | 6 | 5 | | | | 12 | 3 | 5 | | | | 1 | .01 | .05 | .00 | .01 | .01 | .06 |
| (n=8) | | All | 3301 | 382 | 20 | 2 | 3 | 8 | 9 | | | | 13 | 4 | 5 | | | | 1 | .01 | .05 | .00 | .01 | .01 | .06 |
| Montgomery 600 | 1 | Box | 235 | 60 | 2 | 5 | 3 | 4 | | 4 | | | 4 | 2 | 1 | | | | | .01 | .03 | .02 | .08 | .03 | .12 |
| | | Cubby | 71 | 28 | 1 | 1 | | 2 | 2 | | | 1 | 1 | | | | | | | .01 | .04 | .01 | .04 | .03 | .07 |
| | | Hole | 162 | 48 | 4 | 3 | 1 | 6 | 3 | | | 1 | 4 | 1 | 1 | | | | | .02 | .08 | .02 | .06 | .04 | .15 |
| | | House | 40 | 16 | 3 | | | | | | | | 3 | | | | | | | .08 | .19 | .00 | .00 | .08 | .19 |
| (n=8) | | Open | 86 | 10 | 1 | | | | 2 | | | | 1 | | | | | | | | | | | | |
| | | Run | 55 | 18 | 2 | 1 | | 7 | 5 | 2 | | 2 | | 1 | | | | | | .04 | .11 | .02 | .06 | .05 | .17 |
| | | Trail | 190 | 34 | 2 | | 1 | 15 | 5 | 1 | | | 1 | 1 | | | | 1 | | .01 | .06 | .00 | .00 | .01 | .06 |
| | | All | 839 | 214 | 15 | 10 | 5 | 34 | 17 | 7 | | 4 | 14 | 5 | 2 | | | 1 | | .02 | .07 | .01 | .04 | .03 | .11 |
| Stake'n'Take | | Hole | 495 | 70 | 7 | 3 | | 20 | 3 | 4 | 3 | | | 10 | | | | | | .01 | .10 | .01 | .04 | .02 | .14 |
| | | Trail | 18 | 4 | | | | 2 | 1 | | | | | | | | | | | | | | | | |
| (n=1) | | All | 513 | 74 | 7 | 3 | | 22 | 4 | 4 | 3 | | | 10 | | | | | | .01 | .09 | .01 | .04 | .02 | .14 |
| Submarine Box | 6 | House | 5 | 4 | 2 | | | | | | | | | | | | 2 | | | .40 | .50 | .00 | .00 | .40 | .50 |
| | | Run | 53 | 34 | 26 | | 9 | 3 | | 2 | | | | | | | 26 | | | .49 | .70 | .00 | .00 | .49 | .70 |
| (n=4) | | Submerged | 14 | 8 | | | 4 | | | | | | | | | | | | | | | | | | |
| | | All | 72 | 46 | 28 | | 13 | 3 | | 2 | | | | | | | 28 | | | .39 | .61 | .00 | .00 | .39 | .61 |
| Submarine Funnel | 6 | Run | 8 | 5 | 3 | | | | | | | | | | | | 3 | | | .37 | .60 | .00 | .00 | .37 | .60 |
| | | Submerged | 7 | 5 | | | | | | | | | | | | | | | | | | | | | |
| (n=2) | | All | 15 | 10 | 3 | | | | | | | | | | | | 3 | | | .20 | .30 | .00 | .00 | .20 | .30 |

* n= number of trap testers